

What is claimed is:

Claim 1. A network communication device for bi-directional communication networks, comprising:

a first portion connectable to a first point and a second point on the bi-directional communication network, said first portion being configured to manage collisions among a first set of messages transmittable from said first point to said second point; and

a second portion connectable to said first point and said second point, said second portion being configured to transmit free of collision management a second set of messages transmittable from said second point to said first point.

Claim 2. The network communication device as in claim 1, wherein said first and second messages are selected from the group consisting of electrical messages, optical messages, acoustic messages, and any combinations thereof.

Claim 3. The network communication device as in claim 1, wherein said first portion is a network switch.

Claim 4. The network communication device as in claim 3, wherein said network switch is an analog switch or a digital switch.

Claim 5. The network communication device as in claim 1, wherein said second portion is a network hub.

Claim 6. The network communication device as in claim 5, wherein said network hub is an analog hub or a digital hub.

Claim 7. The network communication device as in claim 1, wherein said first and second portions are separate devices or a single device.

Claim 8. The network communication device as in claim 1, further comprising a plurality of network connections for connecting said first and second portions to said first and second points.

Claim 9. The network communication device as in claim 8, wherein said plurality of network connections are standardized Ethernet cable connections.

Claim 10. A bi-directional communication device comprising:

a hub portion;

a switch portion;

a first plurality of connections for connecting said hub portion to a plurality of first points on a bi-directional communication network and to a second point on the bi-directional communication network; and

a second plurality of connections for connecting said switch portion to said plurality of first points and to said second point.

Claim 11. The bi-directional communication device as in claim 10, wherein said hub portion is configured to transmit first messages from said second point to said plurality of first points.

Claim 12. The bi-directional communication device as in claim 11, wherein said hub portion is configured to transmit said first messages without collision management.

Claim 13. The bi-directional communication device as in claim 10, wherein said switch portion is configured to transmit second messages from said plurality of first points to said second point.

Claim 14. The bi-directional communication device as in claim 13, wherein said switch portion is configured to manage collisions among said second messages.

Claim 15. The bi-directional communication device as in claim 10, wherein said network switch and said network hub are analog devices, digital devices, or any combination thereof.

Claim 16. The bi-directional communication device as in claim 15, wherein said hub and switch portions are separate devices or a single device.

Claim 17. The bi-directional communication device as in claim 10, wherein said first and second plurality of connections are standardized Ethernet cable connections.

Claim 18. A method of communicating messages on a bi-directional communication network, comprising:

transmitting a first message from each of a plurality of first points on the bi-directional communication network to a single second point on the bi-directional communication network through a switch portion of a communication device; and

transmitting a second message from said single second point to said plurality of first points through a hub portion of said communication device.

Claim 19. The method as in claim 18, wherein said switch and hub portions are analog devices, digital devices, or any combinations thereof.

Claim 20. The method as in claim 19, wherein said switch and hub portions are separate devices or a unitary device.